CLAIMS

1. Method of depositing an amorphous layer containing mostly fluorine and carbon on a substrate in a vacuum, characterized in that it includes a step of depositing said layer by means of an ion gun adapted to eject ions in the form of a beam of accelerated ions created from at least one compound containing fluorine and carbon in gas or saturated vapor form fed to the ion gun.

2. Method according to claim 1, characterized in that the layer containing mostly fluorine and carbon is the low index exterior layer of an antireflection stack deposited on the substrate.

3. Method according to either claim 1 or claim 2, characterized in that the ion gun is fed with at least one compound containing fluorine and carbon mixed with oxygen or at least one rare gas.

4. Method according to any one of claims 1 to 3, characterized in that the ion gun is fed with at least one aliphatic or cyclic fluorocarbon compound, at least one aliphatic or cyclic fluorinated hydrocarbon, or a mixture thereof.

5. Method according to claim 4, characterized in that the ion gun is fed with perfluorocyclobutane ($c\text{-}C_4F_8$) or a mixture thereof with at least one other fluorocarbon compound, in particular tetrafluoromethane (CF_4) or hexafluoromethane (C_2F_6), or at least one rare gas.

6. Method according to any one of claims 1 to 5, characterized in that the substrate is a plastics material substrate.

7. Method according to claim 2 and any one of claims 3 to 6, characterized in that it consists in fabricating an antireflection stack by the following steps:

- physical vapor-phase deposition (PVD) in a

vacuum of three layers respectively having, from the interior toward the exterior, a high refractive index/a low refractive index/a high refractive index, preferably of the type $ZrO_2/SiO_2/ZrO_2$;

- depositing the amorphous external layer containing mostly fluorine and carbon using the ion gun.

8. Method according to claim 7, characterized in that each *in vacuo* PVD step includes evaporation by electron bombardment of the material to be deposited.

9. Method according to claim 7 or claim 8, characterized in that each deposition step is carried out at a pressure less than or equal to 10^{-2} Pa.

10. Use of the method according to any one of claims 1 to 9 to improve the adhesion of a low refractive index exterior layer to the underlying layer of an antireflection stack.

11. Device suited to carrying out the method according to any one of claims 1 to 9 and including:

- an ion gun (1);
- means (7) for feeding the ion gun with a compound containing fluorine and carbon; and
- a substrate holder (3) above the ion gun.

12. Device according to claim 11, characterized in that the ion gun includes an annular anode (4), a filamentary cathode (5) extending diametrically above the annular anode, and a magnet (6) below the annular anode.

13. Device according to claim 12, characterized in that the ion gun (1) includes a gas distributor (2) between the annular anode and the magnet.

14. Device according to claim 12 or claim 13, characterized in that it includes a chamber (8) in which the ion gun (1) and the substrate holder (3) are accommodated and a pumping system (11) for evacuating the chamber.

15. Device according to claim 14, characterized

in that it includes a cold trap adapted to increase the water pumping rate.

16. Device according to any one of claims 11 to 15, characterized in that it includes an electron gun (12) for evaporating by electron bombardment the materials to be deposited.